

# AUTHOR INDEX

Abd-Elnaby, H. A., 311

Aca, R. T. F., 272, 277

Albury, M. N., 86

Al Doory, Y., 492

Andersen, A. A., 181

Andersen, M. R., 181

Anderson, R. F., 9, 153

Angelis, A., 326

Angelotti, R., 193

Apai, J., 297

Balducci, D., 190

Balducci, M., 190

Balish, E., 224

Basu, S. N., 441

Bent, D. F., 146

Bergmann, F., 237

Bhattacharyya, P. K., 524, 529

Bhuyan, B. K., 302

Black, J. J., 16, 23

Bogar, F. D., 169

Bond, R. G., 561, 567

Borzani, W., 500

Bose, R. G., 441

Bowman, R. O., 223

Boyd, F. M., 137

Bruch, C. W., 123

Bungay, H. R., 293

Burroughs, W., 583

Bushnell, O. A., 272, 277

Cabelli, V. J., 407

Cadmus, M. C., 153

Carter, P. B., 176

Casida, L. E., Jr., 55

Ceglowski, W. S., 458

Chakravarty, T., 441

Christensen, C. M., 331

Christiansen, W. C., 583

Ciegler, A., 132

Clark, W. A., 463, 466

Clendenning, J. R., 169

Cochran, G. W., 176

Coggin, J. H., Jr., 552

Colmer, A. R., 206

Coscarelli, W., 413

Curby, W. A., 480

Daack, G. M., 472

Darken, M. A., 387

Davis, R. E., 305, 548

Dawson, D. A., 40

DeArmon, I. A., Jr., 422

Deindoerfer, F. H., 359

Demain, A. L., 321

Dietz, A., 258

Dyer, D. L., 129

El-Bisi, H. M., 431

Emiliani, E., 504

Ernst, R. R., 337, 342, 452

Faber, J. E., Jr., 90

Falanghe, H., 572

Farran, J. D., 515

Fernelius, A. L., 422

Fields, M. L., 70, 231, 513

Fincher, E. L., 542

Finley, N., 231

Fishbein, M., 79

Follstad, M. N., 331

Foter, M. J., 193

Gaspar, A. J., 90

Gaudy, A. F., Jr., 264

Gaudy, E., 200

Gershon, H., 348, 556

Gibor, A., 169

Godzeski, C. W., 515

Goeser, P. A., 240

Golueke, C. G., 102

Graikoski, J. T., 31

Grant, C. L., 413

Greene, V. W., 561, 567

Gunderson, M. F., 16, 23, 354

Gutierrez, J., 305, 548

Hall, H. E., 193

Hall, H. H., 132

Hamilton, P. B., 577

Harper, R. H., 185

Hedrick, L. R., 428

Himmelfarb, P., 431

Hodge, H. M., 345

Horneland, W., 463

Horton, D. R., 515

Humphrey, A. E., 359

Hutton, R. S., 345

Jackson, R. W., 9

Jay, J. M., 247, 252

Johnson, L. F., 552

Kelley, M. J., 538

Kempe, L. L., 31

Klapper, B. F., 487

Klein, A. G., 463

Klein, F., 422

Koburger, J. A., 496

Koch, R. B., 326

Koesterer, M. G., 123

Koutsoyannis, S. P., 1

Knight, S. G., 577

Kuehn, H. H., 354

Kutzner, H. J., 157

Lachapelle, R., 224

Lagoda, A. A., 9, 153

Lankford, C. E., 99

Larsh, H. W., 492

Latham, W. C., 146

Lear, D. W., 60

Lear, S. A., 458

Levin, G. V., 169

Levin, M. A., 407

Levine, L., 146

Lewis, K. H., 193

Lincoln, R. E., 422

Lind, H. E., 480

Lippitz, G., 472

Litsky, W., 431

Luckey, T. D., 52

Lycette, R. M., 428

McDaniel, H. R., 223

Maister, H. G., 401

Majumdar, S. K., 157

Maki, W., 93

Malaney, G. W., 44

Mancini, G., 190

Margalith, P., 309

Mathews, J., 258

May, K. N., 137

Mayeux, J. V., 206

Metcalf, S. N., Jr., 345

Michaelsen, G. S., 561, 567

Middaugh, P. R., 422

Middlebrook, J. B., 223

Miller, B., 93

Miller, H. T., 52

Miller, M. W., 394

Misenheimer, T. J., 9

Mohr, J. E., 176

Monro, H. A. U., 448

Morris, M. E., 289

Mundt, J. O., 552

Myers, G. E., 418

Nakamura, M., 40

Nelson, G. E. N., 132

Newcomb, H. R., 224

Newkirk, J. F., 321

Nickerson, W. J., 556

Niketić, G., 86

Oertli, E., 93

Orlando, M. D., 422

Oswald, W. J., 102

Ott, J. L., 515

Papavassiliou, J., 65

Parmegiani, R., 348, 556

Parnas, I., 237

Pavey, D., 515

Payne, W. J., 542

Pederson, C. S., 86

Perrine, T. D., 93

Peterson, A. C., 16, 23

Phaff, H. J., 394

Phillips, A. W., 224

Pipes, W. O., 1, 281

Pittenger, R. C., 293

Pramer, D., 413, 436

Prema, B. R., 524, 529

Quinn, H., 74

Quinn, L. Y., 580, 583



# SUBJECT INDEX

- Acetobacter*, presence in figs, 394  
*Aerobacter*, aerogenic response at elevated temperature, 79  
 Activated sludge systems, induction and repression in, 264  
 Adsorption method for measuring dead bacterial cells, 500  
 Aerobiology, sampler for airborne bacteria, 181  
 Agar drum sampler, for monitoring airborne bacteria, 181  
 Air, hospital, contamination of, 561, 567  
 Air pollutants, effect on *Bacillus megaterium*, 217  
 Algae, control of, 289  
 Algae, harvest by froth flotation, 169  
 Algae, isolation from contaminated cultures, 223  
 Algae, materials for culture of, 129  
 Algicides, evaluation of, 289  
 Ammonium compounds, effect on *Escherichia coli*, 458  
 Antibacterial activity of quaternaries, 211  
 Antibiotic production, by anaerobic bacteria, 55  
 Antibiotic sensitivity of staphylococci in meat, 252  
 Antimicrobial activity in a defined system, 348  
 Antimicrobial agents, effect on fabrics, 74  
 Antitumor substances, pactamycin, 302  
 Arene-type hydrocarbon air pollutants, 217  
*Arthrobotrys conoides*, growth requirements of, 413  
*Aspergillus glaucus*, growth in barley kernels, 331  
*Aspergillus niger*, autolysis of, 504  
*Aureobasidium pullulans*, presence in pastries, 354  
 Autolysis of *Aspergillus niger*, 504
- Bacillus anthracis*, shelf-life of, 422  
*Bacillus coagulans*, effect of *Oidium lactis* on, 70  
*Bacillus licheniformis*, isolation from banana purée, 309  
*Bacillus megaterium*, effect of air pollutants on, 217  
*Bacillus* species, growth stimulant for, 99  
*Bacillus stearothermophilus*, spores, death in steam, 452  
*Bacillus stearothermophilus*, spores, dormancy of, 231  
*Bacillus subtilis*, effect of humidification on, 342  
*Bacillus subtilis*, inactivation by gaseous ethylene oxide, 337, 342  
*Bacillus subtilis*, presence in drilling mud, 418  
 Bacteria, airborne, monitors for, 181  
 Bacteria, anaerobic, production of antibiotics by, 55  
 Bacteria, effect of nitric oxide on, 185  
 Bacterial cell walls, preparation of, 93  
 Bacterial cells, dead, measurement of, 500  
 Bacterial cells, disruption of, 37  
 Bacterial utilization of ether glycols, 542  
 Bactericides, bromide-hypochlorite, effect on microorganisms, 538  
 Bacteriophages, attempts to freeze, 463  
 Bacteriophages, pattern in staphylococci in meat, 252  
 Bacteriophages, preservation of, 466  
 Ballistic disruption of *Penicillium chrysogenum*, 577  
 Banana purée, isolation of *Bacillus licheniformis* from, 309  
 Barley kernels, microflora of, 331  
 Beef, nonmicrobial off-condition of, 240  
 Beef, sterilization of, 31  
 Beverages, bacteriology of soft drinks, 311  
 Biosynthesis of cephalosporin C, 321, 515  
 Biosynthesis of erythromycin, relation to growth, 293  
 Biosynthesis of streptomycin, 157  
 Biotin, requirement of *Arthrobotrys conoides* for, 413  
*Blakeslea trispora*, synthesis of  $\beta$ -carotene by, 132  
 Brighteners, absorption and transport by living cells, 387  
 Bromide-hypochlorite bactericides, effect of, 538
- Cabbage, pickled, fermentation of, 86  
*Calimyrna* figs, microbial populations in, 394  
*Candida guilliermondii*, presence in figs, 394  
 Carbohydrates, in autolysis of *Aspergillus niger*, 504  
 Carbon dioxide-limited growth of *Chlorella*, 281  
 Carbon replication, use in characterization of streptomycetes, 258  
 Carotenoids, microbiological production of, 132  
 Carotenoids, production by *Blakeslea trispora*, 132  
 Cell counts, spores as reference particles in, 487  
 Cell disruption, ballistic, of *Penicillium chrysogenum*, 577  
 Cell-homogenizing press, 37  
 Cell systems, for preparation of poliomyelitis vaccine, 190  
 Cephalosporin C, biosynthesis of, 321, 515  
 Chemical stimulation of *Bacillus*, 99  
 Chemostat, application to continuous culture, 281  
 Chicken cage, germfree, 52  
 Chickens, microbial concentration in air sac cavity of, 137  
 Chicks, germfree, rearing of, 224  
 Chicks, monocontaminated, rearing of, 224  
*Chlorella*, carbon dioxide-limited growth of, 281  
*Chlorella*, light-limited growth of, 1  
*Chlorella pyrenoidosa*, materials for culture of, 129  
 Citric acid, production by *Aspergillus niger*, 504  
 Clams, determining sanitary quality of, 60  
*Clostridium botulinum*, resistance to gamma rays, 326  
*Clostridium botulinum*, sterilization of beef inoculated with, 31  
*Clostridium perfringens*, quantitation of, in foods, 193  
 Coliforms, occurrence in farm pond waters, 44  
 Composting, continuous thermophilic, 108  
 Contamination of hospital air, 561, 567  
 Continuous culture, growth of *Chlorella* in, 1  
 Continuous-culture apparatus, design of, 580  
 Continuous thermophilic composting, 108  
 Coulter Counter, bacteriological experiences with, 480  
*Cryptococcus laurentii* var. *flavescens*, polysaccharide production with, 153  
 Culture medium studies, 583  
 Cysteine, effect on survival of *Escherichia coli* in sea water, 436
- Decontamination of liquid egg, by  $\beta$ -propiolactone, 123  
 2,2-Dichloropropionic acid, effect on nitrite oxidation, 206  
 Disruption of bacterial cells, 37  
 Dormancy of *Bacillus stearothermophilus* spores, 231  
 Drilling mud, starch-fermenting bacteria in, 418
- Enterococci, occurrence in farm pond waters, 44  
 Enteropathogens, survival in passionfruit nectar base, 277  
*Entodinium simplex*, fatty acid uptake by, 548  
*Epidinium ecaudatum*, culture and metabolism of, 305  
 Erythromycin fermentation, growth-biosynthesis relationship in, 293  
*Escherichia coli*, aerogenic response at elevated temperature, 79  
*Escherichia coli*, counting of, 480  
*Escherichia coli*, destruction of, by  $\beta$ -propiolactone, 123  
*Escherichia coli*, effect of ammonium compounds on, 458  
*Escherichia coli*, effect of freezing on motility of, 297  
*Escherichia coli*, fate in frozen pot pies, 472  
*Escherichia coli*, survival in sea water, 436  
 Ether glycols, bacterial utilization of, 542  
 Ethylene oxide, bacterial inactivation with, 337, 342  
 Ethylene oxide, inactivation of *Bacillus subtilis* with, 337  
 Ethylene oxide, use in fumigation of jute bags, 448

- Fabrics, treated, antimicrobial properties of, 74  
 Farm pond waters, occurrence of microorganisms in, 44  
 Fat, from mushroom mycelium in vinasse, 572  
 Fatty acids, presence in soured beef, 240  
 Fatty acids, uptake by *Entodinium simplex*, 548  
 Fatty acids, uptake by *Isotricha prostoma*, 548  
 Fermentation, in biosynthesis of cephalosporin C, 515  
 Fermentation, of pickled cabbage, 86  
 Fermentation process review, 359  
 Figs, microbial populations in, 394  
 Fluorescent brighteners, absorption and transport of, 387  
 Foods, identification of *Clostridium perfringens* in, 193  
 Freezing, effect on *Escherichia coli*, 297  
 Freezing, effect on *Pseudomonas fluorescens*, 297  
 Freezing of bacteriophages, 463  
 Freundlich's law, applicability to methylene blue adsorption by dead yeast cells, 141  
 Froth flotation, algal harvesting by, 169  
 Frozen cells, survival of *Shigella sonnei*, 40  
 Frozen foods, growth of staphylococci in, 16  
 Frozen pot pies, effects on microorganisms, 472  
 Fumaric acid, production of, 9  
 Fumigation of jute bags, with ethylene oxide and methyl bromide, 448  
 Fungi, filamentous, for Voges-Proskauer reactions, 513  
 Fungi, growth on weather-exposed jute fabrics, 441  
 Fungi, in fruit-filled pastries, 354  
 Fungi, pathogenic, total lipids of, 492  
 Fungi, spores, use in absolute cell counts, 487  
  
 Gamma-ray sterilization of beef, 31  
 Gamma rays, resistance of *Clostridium botulinum* to, 326  
 Gas formation by *Escherichia coli*, 79  
 Germfree chicken cage, 52  
 Germfree vertebrates, rearing of, 224  
 Glycols, bacterial utilization of, 542  
  
 Halohydrocarbons, activity of quaternaries prepared from, 211  
*Hansenula ciferrii*, production of tetraacetylphytosphingosine by, 401  
 Heat activation of *Bacillus stearothermophilus*, 231  
 Herbicides, effect on nitrite oxidation, 206  
 Hexamethylenetetramine, activity of quaternaries prepared from, 211  
 Homogenizing press, description of, 37  
 Hospital air, contamination of, 561, 567  
 Humidification, effect on *Bacillus subtilis*, 342  
 Humidity, effect on bactericidal activity of propylene oxide vapor, 431  
 Hydrocarbon, influence on carotenogenesis by *Blakeslea trispora*, 132  
 Hydroxycarboxylic acids, activity with chelates of salts, 556  
 Hydroxynaphthoic acids, antimicrobial activity with hydroxyacids, 348  
  
 Ichthyotoxin, of *Prymnesium parvum*, activation of, 237  
*Isotricha prostoma*, fatty acid uptake by, 548  
  
 Jute bags, fumigation to eradicate ring rot bacteria, 448  
 Jute fabrics, growth of fungi on, 441  
  
*Lactobacillus brevis*, effect on cabbage, 86  
*Leuconostoc mesenteroides*, effect on cabbage, 86  
 Light-limited growth of *Chlorella*, 1  
 Lipids, action in yeast flocculation, 428  
 Lipids, in metabolism of rumen ciliates, 548  
 Lipids, of pathogenic fungi, 492  
  
 Marine phytoplankton, growth in presence of toxicants, 532  
 Mass culture of *Porphyridium cruentum*, 102  
 Meat, nonmicrobial off-condition of, 240  
 Meat, staphylococci in, 247, 252  
 Media, competitive growth of staphylococci on, 23  
 Media for recovery of *Pasteurella tularensis*, 407  
 Medium for growth of *Pasteurella tularensis*, 90  
 Mesophilic fungi in fruit-filled pastries, 354  
 Metal chelates of salts, antimicrobial activity with hydroxyarboxylic acids, 556  
 Metals, toxicity to bacteria, 345  
 Methionine, stimulatory effect on cephalosporin C, 321  
 Methyl bromide, use in fumigation of jute bags, 448  
 Methylene blue, adsorption by dead yeast cells, 141  
 Microflora of frozen passionfruit nectar base, 272  
 Milk, activation of starter cultures in, 496  
 Mono-terpenes, transformation of, 529  
 Mueller medium for tetanus toxin production, modification of, 146  
 Mushroom mycelium, production in vinasse, 572  
 Myo-inositol, effect on streptomycin production, 157  
  
 Natural products, algicidal properties of, 289  
 Nebulizer, description of, 6  
 Nitric oxide, effect on bacteria, 185  
 Nitrification, effect of herbicides on, 206  
 Nutrition of *Porphyridium cruentum*, 102  
  
*Oidium lactis*, effect on *Bacillus coagulans* in tomato juice, 70  
*Ophryoscolex*, relation of *Epidinium ecaudatum* to, 305  
 Organic waste, composting of, 108  
  
 Pactamycin, production by *Streptomyces pactum*, 302  
 Passionfruit nectar base, microflora of, 272  
 Passionfruit nectar base, survival of enteropathogens in, 277  
*Pasteurella tularensis*, growth enhancement of, 90  
*Pasteurella tularensis*, media for recovery of, 407  
*Pasteurella tularensis*, shelf-life of, 422  
 Pastries, fungi in, 354  
 Pathogens in passionfruit nectar base, 277  
*Penicillium chrysogenum*, ballistic disruption of, 577  
*Penicillium thomii*, presence in pastries, 354  
 Phage, see Bacteriophage  
 Photoinactivation of ichthyotoxin of *Prymnesium parvum*, 237  
 Phytoplankton, marine, growth in presence of toxicants, 532  
 $\alpha$ -Pinene, transformation of, 524  
 Plants, growth of *Streptococcus faecalis* var. *liquefaciens* on, 552  
 Plastic isolator, use in rearing germfree chicks, 224  
 Plastics, toxicity to bacteria, 345  
 Poliomyelitis vaccine, cell systems for preparation of, 190  
 Polysaccharide, production with *Cryptococcus laurentii* var. *flavescens*, 153  
 Polysaccharide production, by *Sphaerotilus natans*, 200  
*Porphyridium cruentum*, mass culture of, 102  
 Potato ring rot bacteria, eradication of in jute bags, 448  
 Preservation of bacteriophages, 466  
 Press for cell-wall preparations, 93  
 Production of fumaric acid, 9  
 Production of microorganisms under controllable conditions, 6  
 $\beta$ -Propiolactone, destruction of enteric bacteria with, 123  
 Propylene oxide vapor, bactericidal activity of, 431  
 Protein, effect of absence on tetanus toxin production, 146  
 Protein, from mushroom mycelium in vinasse, 572  
*Prymnesium parvum*, activation of ichthyotoxin of, 237  
*Pseudomonas fluorescens*, effect of freezing on motility of, 297  
 Psychrophiles, occurrence in farm pond waters, 44  
 Psychrophilic organisms, effect on staphylococcal growth, 23  
 Psychrophilic fungi in fruit-filled pastries, 354



32

Quaternaries, antibacterial activity of, 211  
 Quaternary ammonium compounds, effect on *Escherichia coli*, 458  
 Quinolins, antimicrobial activity with hydroxy-acids, 348  
 Quinolins, chelates of salts, antimicrobial activity of, 556

vcar-

Replica plating, use in toxicity studies, 345  
*Rhizopus arrhizus*, production of fumaric acid by, 9  
 Rumen ciliates, culture of *Epidinium caudatum*, 305  
 Rumen ciliates, lipid metabolism of, 548  
 Ruminant organisms, continuous culture of, 580, 583

of, 146

*Saccharomyces cerevisiae*, action of deflocculating agents on, 428  
 Salicylic acids, antimicrobial activity with hydroxy-acids, 348  
*Salmonella senftenberg*, destruction of, by  $\beta$ -propiolactone, 123  
*Salmonella typhimurium*, destruction of, by  $\beta$ -propiolactone, 123  
*Salmonella typhimurium*, fate in frozen pot pies, 472  
 Sampling techniques, use in thoracic air sacs of chickens, 137  
 Sanitary quality of clams, 60  
 Saprophytic organisms, effect on staphylococcal growth, 23  
 Sea water, survival of *Escherichia coli* in, 436  
*Serratia marcescens*, counting of, 480  
*Serratia plymuthica*, presence in figs, 394  
 Sesqui-terpenes, transformation of, 529  
 Shelf-life of bacteria, 422  
*Shigella sonnei*, recovery of frozen cells, 40  
 Sludge systems, induction and repression in, 264  
 Soft drinks, unbottled, bacteriology of, 311  
 Spectrophotometric study of *Staphylococcus aureus*, 176  
*Sphaerotilus natans*, polysaccharide produced by, 200  
 Sphingolipids, extracellular formation of, 401  
 Spoilage organisms, *Bacillus licheniformis*, 309  
 Spores, fungus, use in absolute cell counts, 487  
 Spores of *Bacillus stearothermophilis*, 231  
 Spores of *Bacillus stearothermophilis*, death in steam, 452  
 Staphylococci in competition with other organisms, 16, 23  
 Staphylococci, presence in meat, 247, 252  
*Staphylococcus aureus*, bacteriophage pattern in meat, 252  
*Staphylococcus aureus*, counting of, 480  
*Staphylococcus aureus*, presence in meat, 247  
*Staphylococcus aureus*, spectrophotometric study of, 176  
 Starch-fermenting bacteria in drilling mud, 418  
 Starter cultures, activation in milk, 496  
 Steam, death of *Bacillus stearothermophilis* spores in, 452  
 Sterilization of beef, 31

552

var.

, 6

7

3

Streptococci, identification of group D, 65  
*Streptococcus bovis*, identification of, 65  
*Streptococcus faecalis*, identification of, 65  
*Streptococcus faecalis* var. *liquefaciens*, growth on plants, 552  
*Streptococcus faecium*, identification of, 65  
*Streptomyces hygroscopicus*, characterization of, 258  
*Streptomyces pactum*, production of pactamycin by, 302  
 Streptomycin, biosynthesis of, 157  
 Substrate utilization, repression and induction of, 264  
 Survival of frozen *Shigella sonnei*, 40  
*Synechococcus lividus*, materials for culture of, 129

Terpenes, microbiological transformation of, 524, 529  
 Tetanus toxin, production without protein, 146  
 Tetraacetylphosphingosine, production of by *Hansenula ci-ferrii*, 401  
 Thermal death of spores in steam, 452  
 Thermotolerances, occurrence in farm pond waters, 44  
 Thermophiles, occurrence in farm pond waters, 44  
 Thermophilic aerobacillus from banana purée, 309  
 Thiamine, requirement of *Arthrobotrys conoides* for, 413  
 Thoracic air sacs of chickens, microbial concentration in, 137  
 Tomato juice, sporulation of *Bacillus coagulans* in, 70  
*Torulopsis stellata*, presence in figs, 394  
 Toxicants, effect on marine phytoplankton, 532  
 Toxicity, use of replica plating to study, 345  
 2,3,6-Trichlorophenylacetic acid, effect on nitrite oxidation, 206

Uniform particles, spores, use in cell counts, 487

Vaccines, poliomyelitis, cell systems for preparation of, 190  
 Vinasse, medium of, production of mushroom mycelium in, 572  
 Voges-Proskauer reactions, filamentous fungi for, 513

Waste, composting of, 108

Weather exposure, effect on fungi in jute fabrics, 441

Yeast flocculation, action of lipids in, 428

Yeasts, formation of sphingolipids by, 401

Yeasts, methylene blue adsorption by dead cells, 141

Yeasts, presence in figs, 394

Zinc, requirement of *Arthrobotrys conoides* for, 413